

REMARKS

Through this Reply, Applicants have amended Claims 25 and 31. Accordingly, Claims 25-33 are active in the present application. The Amendments to Claims 25 and 31 are supported in the specification on at least page 7, lines 9-12 and page 17, lines 26-28. Accordingly, no new matter has been added by the amendment.

The Examiner has rejected Claim 25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,581,101 to Ning et al. (hereinafter “Ning”). Ning discloses a a BSG passivation for passivating the surface of a wafer to complete vertical CMOS devices. However, Ning does not disclose a passivation film “that is a modified spin-on-glass (SOG) film formed by implanting boron impurity into an organic SOG film.” Accordingly, for at least this reason, Applicants submit that Claim 25 is patentably distinguishable from Ning.

The Examiner has rejected Claims 25-33 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 4,984,055 to Okumura et al. (hereinafter “Okumura”) or Japanese Patent No. 6-291202 (hereinafter “Japan ‘202 reference”).

Okumura discloses a semiconductor device having an SOG layer as an interlevel insulation film. An impurity is ion-implanted into the SOG layer. To establish a *prima facie* case of obviousness, the Examiner must show a suggestion or motivation to modify the reference, a reasonable expectation of success, and a teaching or suggestion of all the claim limitations. Applicants submit that Okumura does not teach or suggest a passivation film that covers the surface of the semiconductor substrate and includes a “modified spin-on-glass (SOG) film” that is formed by implanting boron impurity into an organic or inorganic SOG film.

Accordingly, for at least these reasons, Applicants submit that Claims 25-33 are patentably distinguishable from Okumura.

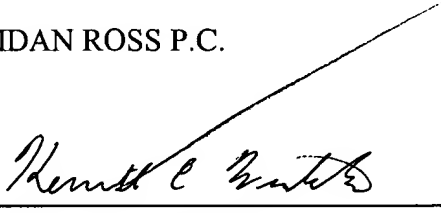
The Japan '202 reference is directed to a semiconductor device that includes a lower boron-doped SOG layer and an upper non-doped SOG layer. The reference discloses forming an interlayer insulation film on the non-doped SOG layer. Accordingly, the doped and non-doped SOG layers are not used as a passivation film. Furthermore, the reference does not disclose that the doped SOG layer is a modified SOG film formed by implanting boron impurity into an organic or inorganic SOG film. Accordingly, for at least these reasons, Applicants submit that Claims 25-33 are patentably distinguishable from the Japan '202 reference.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Claims:

Claims 25 and 31 have been amended as follows:

25. (Amended) A semiconductor device comprising:
a semiconductor substrate;
wirings located on the semiconductor substrate; and
a passivation film covering the surface of the semiconductor substrate and the
5 wirings, including a first insulating film that [contains] is a modified spin-on-glass (SOG)
film formed by implanting boron impurity into an organic SOG film.

31. (Amended) [The semiconductor device according to claim 25, wherein the] A
semiconductor device comprising:
a semiconductor substrate;
wirings located on the semiconductor substrate; and
5 a passivation film covering the surface of the semiconductor substrate and the
wirings, including a first insulating film [includes] that is a modified spin-on-glass (SOG)
film formed by implanting boron impurity into an inorganic SOG [(Spin-on-Glass)] film.